

# World Health Organization (WHO) Recommends Exclusive Breastfeeding in the First Six Months of Life

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## Abstract

**Objective:** to obtain the prevalence of breastfeeding/exclusive breastfeeding until 6 months of life. To assess mothers knowledge about the benefits of breastfeeding and exclusive until six months, the impact of information in the desire to breastfeed and reasons for WHO recommendations failure.

**Methods:** Questionnaires applied to recent given birth women in a tertiary hospital maternity, divided into case-group (providing information about breastfeeding advantages/recommendation of exclusive breastfeeding up to six months) and control-group (not informed by the authors). At six months of age, we call mother's to answer a questionnaire about continuity or not of breastfeeding and if exclusive. For statistical analyses frequency tables and McNemar test were used.

**Results:** Answered to the questionnaire 242 mothers, 239 intended to breastfeed, 54% exclusively until six months. In the 2nd survey, out of 192 respondent mothers 63.5% were breastfeeding. Exclusively until 6 months, 35.4%. In case-group, 56.7% of respondents planned to breastfeed exclusively until 6 months and 39.2% did so; control group, 50.5% planned it and 31.6% did so,  $p = 0.664$ . In case-group 89.7% intend to breastfeed the next son. In a control group 52.6%,  $p < 0.001$ , out of the 54 mothers who didn't breastfeed exclusively, 46.3% invoked labor laws as the reason for introduction of solid food. 36.0% professional advice. The reason given to abandonment was "agalactia" in 78.6%.

**Conclusions:** WHO recommendations for exclusive breastfeeding was followed by 1 in 3 infants. This prevalence was near to the best results worldwide, but still not enough. There were statistically significant differences in behavioral intention, but not in attitude, between case group and control group. Labor law was the reason to early introduction of solid food in most surveyed.

**Keywords:** Breast Feeding; WHO (World Health Organization); Primary Health Care; Pregnancy and nutrition

## Introduction

According to the WHO, breastfeeding can be defined as the act in which the baby receives breast milk extracted or directly from either the mother's or another person's breast, regardless other foods that he may receive. It differs from the concept of exclusive breastfeeding, which is the act of feeding the baby with breastfeeding only, were used without using any other food except for vitamin supplements [1].

The ideal time for breastfeeding and exclusive breastfeeding has been the subject of studies in the area. Breast milk is the main source of nutrients for the baby [2] who should be exclusively breastfed until six months of age in order to optimize his development [3] and because it is readily available it reduces the risk of lack of supply to the baby. This recommendation has beneficial effects in infants with family history of atopy [4].

The benefits also extend to the breastfeeding mother, being associated with a decreased risk of breast and ovarian cancer, a faster return to the weight she had before pregnancy [5,6] and to promote a sense of calmness and stress reduction [7]. This practice is environmentally friendly, because it doesn't cause increased production of waste such as bottles in disrepair, damaged teats or empty milk cans. Besides, in mother-child bond, greater intimacy between mother and infant is allowed by not having a bottle between them [8]. It also brings economically advantages for the family and less infections. A small increase in mothers' breastfeeding would save millions to the National Health System [9-11].

WHO showed that 40% of infants fewer than six months are exclusively breastfed [10]. Currently, the Portuguese legislation doesn't support the most proper baby's breastfeeding, as it only allows mothers to devote themselves exclusively to the baby for four months [12]. However, Portugal is not the worst example. In China, mothers are only allowed for 90 days and are not paid for their jobs, in contrast with Australia, which allows 1 year of maternity leave although also without any pay. In Cuba, mothers are allowed 126 days getting full pay. In 2009 a change in 1992's directives allowed by the EU was approved by the Committee on Women's Rights and Gender Equality. It increased 16 to 20 weeks the time that the mother could devote exclusively to the baby [13]. According to the report "State of the World's Mothers 2012", published by the international humanitarian organization "Save the Children" in May 2012, which consisted of an analysis of 164 countries, Portugal is currently the 15th best country to be a mother, leading by Norway, where maternity leave is 46 weeks with 100% of work pay [14].

The aim of this research is to determine if WHO recommendations on breastfeeding, and particularly exclusive breastfeeding until 6 months, will be fulfilled in infants born in a tertiary Hospital.

## Secondary goal is the answer to following questions

1. Will informed mothers about the benefits exclusive breastfeeding have different conducts from those who are not?
2. What are the main causes for the abandonment of breastfeeding and / or food diversification before six months of age?

Although there are studies that assess the prevalence of breastfeeding in Portugal [15–19], there are no studies that show the impact that information concerning breastfeeding and its advantages will have on the mothers' attitude. This regarding the time that the mothers will exclusively breastfeed the baby, as well as the main causes for quitting or early introducing solid foods.

## Methods

### 1) Population

Postpartum women at tertiary Hospital Maternity with live birth born were surveyed. They voluntarily filled in a questionnaire.

Women were randomly divided into 2 groups. The cases that received information by the investigator about the advantages of breastfeeding and WHO recommendations and those who were not given any information by the investigators.

### 2) Study

Main aim: Prospective study about prevalence of exclusive breastfeeding.

Secondary aim: As the control group didn't have intervention this work has two populations: an experimental study in the case group and an observational one in the control group.

### 3) Sample

Postpartum women in a tertiary Hospital Maternity.

4) Information and Media sources

Questionnaire 1: presence

Questionnaire 2: telephone

### 5) Data

Questionnaires were applied to postpartum women in the Maternity of Hospital de Braga. The users signed a written informed consent.

a) Inclusion criteria:

- a. Acceptance of participation in the study
- b. Live birth in Hospital de Braga
- c. Signature of informed consent

b) Exclusion criteria:

- a. Not meeting the inclusion criteria

The questionnaire was applied in the Maternity of Hospital de Braga for data collection

The respondents were contacted by telephone six months after baby's birth, to a second questionnaire.

a) Inclusion criteria for the telephone questionnaire:

- a. Questionnaire 1 completed
- b. Telephone contact in previous questionnaire

b) Exclusion criteria:

- a. Outdated phone number
- b. Refusal to answer the questionnaire
- c. Baby now deceased
- d. User now deceased
- e. User that do not answer the phone after five contact attempts on different days and different times.

Data were introduced in IBM Statistical Package for Social Sciences (SPSS) 20.0 ®

For statistical analyses we use frequency tables and McNemar test.

The study was approved by the Ethics Committee of the Hospital de Braga

## Results

The study is outlined in figure 1.

Intended to breast feed 98.7% of mothers. They had never been questioned about breastfeeding on the 53.7% of the women. The information regarding breastfeeding was given in the first place by General Practitioner followed by preparation lessons for childbirth. 57 mothers reported having received information from more than one professional. The GP would be the responsible for child's follow-up in 27%. Intended to breastfeed for 6 months 53.3%, (n = 129 mothers).

Before receiving information, 56.6% of case group respondents intended to breastfeed exclusively until 6 months. In the control group, it was found that 50% of respondents intended to breastfeed exclusively until 6 months.

### 2nd Questionnaire

Drop-out was 20.7%.

At birth, 239 (98.7%) mothers intended to breastfeed her child. At the survey made at 6 months of baby's life, responded 192 mothers, 122 mothers still breastfeeding (63.5%), 68 of them exclusively (35.4%). Among the 70 mothers (36.5%) that quitted breastfeeding, did it by the second month of baby's life 24 of them (9.9%).

In the group that had previously received information by the investigator, 97 out of 122 mothers responded to the 2nd questionnaire, 60.8% were still breastfeeding, exclusively until 6 months 39.2%. The 97 mothers surveyed who responded to the questionnaire intended to breastfeed for 6 months in 56.7%.

Among the control group, who had not received information by the investigator previously, 95 out of 120 mothers responded to the 2nd questionnaire, 66.3% still breastfeeding. It was exclusive until 6 months in 31.6%. Thus, 49.5% of the 95 mothers surveyed who responded to the 2nd questionnaire intended to breastfeed until 6 months.

The introduction of solid food, in mothers who did not follow WHO recommendations was between 4th and 5th month of life. The main reason was the beginning of work by mothers. Were advised by the doctor to diversify before the time 37% of mothers. In the case group, the main reason given for the introduction of solid food was related to medical advice (52.4%) and the beginning of work (33.3%). Reported to have initiated diversification because milk was no longer enough 9.5% of mothers reported having diversified by free will 4.8%.

In the control group, the main reason for diversification is related to the onset of labor (54.5%) and medical advice (27.3%). Both were mentioned as reasons for early diversification by 3.0%. Reported having initiated diversification because milk was no longer enough 3.0% of mothers. Other 3.0% said it had been advice by nurse. Decided to diversify on their own 9.1%.

The main reason cited by 78.6% of the surveyed for stopping breastfeeding was "agalactia".

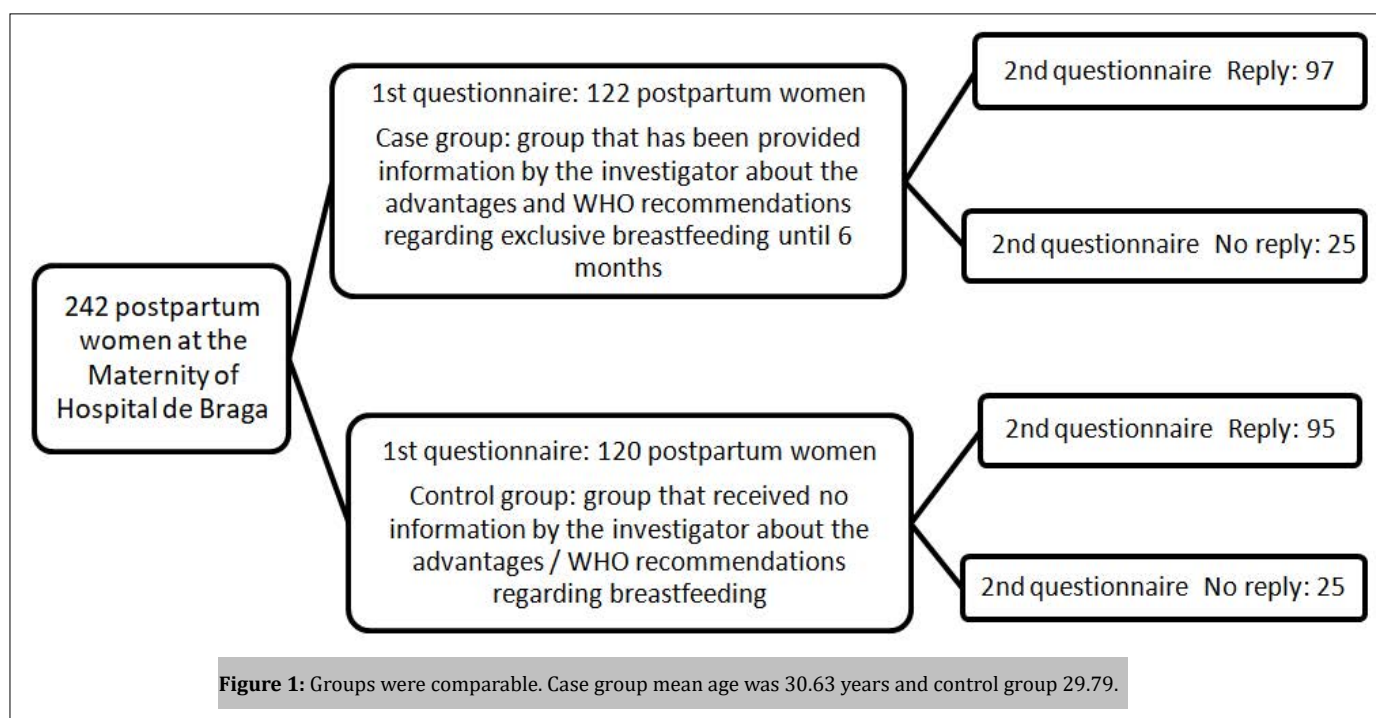


Figure 2: Shows comparison that concerns the number of children.

| Group   | Actual children |    |    |   |   | Total |
|---------|-----------------|----|----|---|---|-------|
|         | 1               | 2  | 3  | 4 | 6 |       |
| Control | 73              | 39 | 5  | 2 | 1 | 120   |
| Case    | 70              | 39 | 11 | 2 | 0 | 122   |
| Total   | 143             | 78 | 16 | 4 | 1 | 242   |

**Figure 2:** Shows comparison and characterization of that concerns the number of children.

| Reason for Diversification     | Absolute Frequency (n) | Relative Frequency (%) | Valid Relative Frequency(%) |
|--------------------------------|------------------------|------------------------|-----------------------------|
| Nurse Advice                   | 1                      | 0.4                    | 1.9                         |
| Medical Advice                 | 20                     | 8.3                    | 37.0                        |
| Begining work + Medical advice | 1                      | 0.4                    | 1.9                         |
| Begining work                  | 25                     | 10.3                   | 46.3                        |
| Insufficient milk              | 3                      | 1.2                    | 5.6                         |
| Free will                      | 4                      | 1.7                    | 7.4                         |
| No answer                      | 50                     | 20.7                   |                             |
| No breastfeeding already       | 70                     | 28.9                   |                             |
| Was exclusive until 6 months   | 68                     | 28,1                   |                             |
| Total                          | 242                    | 100                    |                             |

**Table 1:** "Why did you stop breastfeeding exclusively?".

### Case Group

|                 |                     | Questionnaire 2 |            |                     |            |       |      |         |
|-----------------|---------------------|-----------------|------------|---------------------|------------|-------|------|---------|
| Questionnaire 1 |                     | Up to 6 months  |            | Other than 6 months |            | Total |      | p*      |
|                 |                     | n               | % of total | n                   | % of total | n     | %    | < 0.001 |
|                 | Up to 6 months      | 51              | 92.7%      | 4                   | 7.3%       | 55    | 56,7 |         |
|                 | Other than 6 months | 36              | 85.7%      | 6                   | 14.3%      | 42    | 43,3 |         |
|                 | Total               | 87              | 89.7%      | 10                  | 10.3%      | 97    | 100  |         |

### Control Group

|                 |                     | Questionnaire 2 |            |                     |            |       |       |       |
|-----------------|---------------------|-----------------|------------|---------------------|------------|-------|-------|-------|
| Questionnaire 1 |                     | Up to 6 months  |            | Other than 6 months |            | Total |       | p*    |
|                 |                     | n               | % of total | n                   | % of total | N     | %     | 0.664 |
|                 | Up to 6 months      | 38              | 80.9%      | 9                   | 19.1%      | 47    | 49.5% |       |
|                 | Other than 6 months | 12              | 25%        | 36                  | 75%        | 48    | 50.5% |       |
|                 | Total               | 50              | 52.6%      | 45                  | 47.4%      | 95    | 100%  |       |

**Table 2:** What is the intention to follow WHO recommendations in a next child? \*McNemar test.

Mothers say they have stopped breastfeeding by free will 48.6%. GP was the responsible in 28.6%.

When answered about a next child: In the case group, from the 97 mothers who responded to the 2nd questionnaire report now 89.7% will breastfeed exclusively up to six months if they have another child, against 56.7% at the beginning.

In the control group, 41.7% of the 95 mothers who responded to the 2nd questionnaire said they will breastfeed exclusively up to six months if they have another child, against 50.5% who intended this initially.

There was a significant difference in intention about breastfeeding among case group, more favorable attitude than the control group, Tab.13.

### Discussion

WHO advocates exclusive breastfeeding up to 6 months of the baby's life [3] and 1 in 3 infants in this study met those recommendations. Among most surveyed, labor legislation was the reason given for the introduction of solid foods out of the recommended age. This is prevalence near better results globally, WHO estimates that the values are less than 40% globally but still only a minority of infants follow WHO recommendations.

Statistically significant differences were observed in behavioral intention to exclusively breastfeed until six months next son, but not in the attitude - exclusively breastfed until six months this child

- between the case and the control group, after information about these recommendations.

Mostly mothers whose recommendations were given, said to have started introduction of solid food advised by health care professional. In the group without information provided by the investigator, the labor cause is the most prevalent. This difference is not significant but may indicate an excuse given by mothers, such as "it was not me, it was the professional". Mothers without this pressure, especially in the case group, have used to work excuse. Another possibility, less likely but that has to be raised, is mothers informed their doctor or nurse, but those didn't agree, considering as an interference following the infant, and didn't value the recommendation.

In the total group of 192 mothers who completed the study, during the 6 month follow-up prospective, non-compliance with the recommendations in most women was for work reasons. The labor law gives partial protection of breastfeeding but does not protect exclusive breastfeeding up to 6 months. If implementation of this recommendation of WHO is wanted, it is imperative to modify the legislation.

All health professionals, especially pediatricians, can't be absent from this discussion, that should also involve civil society because it concerns everyone.

The presentation of these results showed lack of information and the impact that could generate, but the publishment is necessary to argue and to reinforce the importance of changing our



politics in 2016. In 2016 this law will be approved in Portugal, so this is the main reason to publish these results.

I hope this paper can help with the missing data so this discussion can be put at the legislative level to help Portuguese women to deliberately give their children what is cheaper in this crisis situation. They would be preventing diseases that would expend funds to the national health and giving their children a better development, that will be more capable in the future and also that is WHO's recommended evidence medicine of infant feeding.

This study also highlights that there is defective information sharing regarding breastfeeding. GP was the professional who had spoken of breastfeeding prior to child-birth in most cases, but less than half of the mothers had been approached to the subject "breastfeeding" at delivery. Only about 15% had been consulted prior to delivery by a pediatrician. This is explained by the rarity in Portugal of prenatal consult with a pediatrician, which is an essential reference in planning for the first three months of life. The abandonment of breastfeeding is more common in the second month life, as this study shows.

The main limitations of study are related to sample size and the fact that they are self-completing questionnaires and only one moment of follow-up, the call past six months.

"Didn't have milk" (sic), "breast didn't give" are indications of lack of support that antenatal consult could repair, since these are the main reasons for the abandonment of breastfeeding, already suggested by other studies [20,24].

The number of mother's breastfeeding at 6 months was higher than other studies previously conducted in 2007 and in 2002 in Lisbon [20] and in Viana do Castelo [21]. In 2001, a study found that the prevalence of exclusive breastfeeding at 6 months was 46% in Austria, 42% in Sweden and 21% in the United Kingdom [22]. In Portugal, the situation has been improving over the years [23].

There is a prevalence of exclusive breastfeeding until six months of 46% in Austria, 42% in Sweden, two countries with Gross National Product higher than Portugal, supporting the hypothesis that breastfeeding has benefits even from an economic standpoint. This prevalence has been supported with appropriate legislation. If medical evidence isn't enough for the government, this can be taken into account in order to improve Portugal's economic situation.

During telephone contact, all mothers who reported "having been without milk" admitted to have been emotionally difficult to overcome, supporting data from a previous study that found fewer mothers with postpartum depression and lower degree of sadness than in breastfeeding mothers, a result of high emotional bond from the breastfeeding [24]. It is also important to emphasize that breastfeeding is a surplus for everyone but the woman has the right not to exercise if that is her desire, and blaming the mother should always be avoided.

The lack of information regarding exclusive breastfeeding is noticeable up to 6 months. It would be important to conduct medical community awareness, giving emphasis to WHO's indications and the importance of exclusive breastfeeding up to six months, a topic often overlooked.

## Conclusions

The prevalence of exclusive breastfeeding is close to the best results in the world, but still a minority of infants. However, the impact of information sharing was felt in the population studied, showing statistically significant differences in behavioral intention in favor of breastfeeding in the group that received information by the investigator.

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